IN THE CLAIMS:

Listing of the claims:

1. (Cancelled)

2. (Currently amended) A system according to claim ~~1~~ 26 wherein an input channel making significant contribution to the ~~gradient~~ reduction of the error function constitutes an input channel[[,]] which, when ranked by contribution to the ~~gradient~~ reduction of the error function, is within any one of the following top percentiles of the sampled signals: 1%, 5% 10%, 25%, 50%.

3. (Cancelled)

4. (Currently amended) A system according to claim ~~1~~ 26 wherein there are provided a maximum of four ~~sampling means~~ samplers in the sampling system.

5. (Currently amended) A system according to claim ~~1~~ 26 wherein the sampling system comprises a switch~~ing means is~~ arranged to ~~switch between input channels either in a predetermined order or randomly~~ select a subset of the input channels for digitisation.

6. (Currently amended) A system according to claim ~~1~~ 26 wherein ~~there are provided~~ the sampling system is adapted to select a maximum of half the number of ~~sampling means as there are~~ input channels for digitisation at a given time.

7. (Currently amended) A system according to claim ~~1~~ 26 wherein the sampling ~~means~~ system is arranged to sample the ~~at least one~~ subset of input channels at the end of a symbol period.

8. (Currently amended) A system according to claim ~~1~~ 26 wherein the processing means is arranged to determine which input channel has the largest contribution to the ~~gradient~~

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reduction of the error function and use the signal from said channel in the error minimisation routine.

9. (Currently amended) A method of signal processing comprising the steps of: a method of signal processing comprising the steps of:

i) ~~sampling a sample signal of a subset of a plurality of input channels;~~

ii) ~~reducing an error function using said sample, using digital processing means;~~

iii) ~~switching between the subset and another subset of the plurality of input channels using switching means, or resampling the same subset as in step (i); and~~

iv) ~~determining which of the input channels make significant contributions to a gradient of the error function and switching to a subset of the plurality of input channels including at least one of said channels prior to step (iii).~~

i)   receiving a plurality of input signals, weighing the input signals and beamforming the weighted input signals to form a beam;

ii)   sampling a subset of the input signals prior to their being weighted;

iii)   processing the sampled subset to generate weights for weighting the input signals; and

iv)   repeating steps i) to iii) using successive samples wherein:

successive samples may be from a different subset such that the subset includes at least one input channel determined to make a significant contribution to a reduction in an error function associated with the beam from the beamformer.

10. (Currently amended) The method of claim 9 ~~including defining an input channel making significant contribution to the gradient of the error function constitutes an input channel,~~ wherein the subset determined to make a significant contribution to the reduction in an error function associated with the beam is a subset containing an input channel which, when ranked by contribution to the ~~gradient~~ reduction of the error function, is within any one of the following top percentiles of the sampled signals: 1%, 5% 10%, 25%, 50%.

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11. (Currently amended) The method of claim 9 ~~including repeating steps (i) to (iii),~~ ~~iteratively,~~ wherein steps i) to iii) are repeated in order to obtain a minima in the error function.

12-14. (Cancelled)

15. (Currently amended) The method of claim 9 ~~including determining, at step (iv),~~ ~~which of the input channels makes the largest contribution to a gradient of the error function and~~ ~~switching to said channel prior to step (iii)~~ wherein the input having the greatest effect on the reduction in the error function is included within the subset.

16. (Currently amended) A telecommunications system including a signal processing system according to claim ~~1~~ 26 wherein the telecommunications system is a WLAN.

17. (Original) A system according to claim 16 wherein the signal processing system is an access point that is arranged to spatially null a network element from a piconet.

18. (Previously presented) A method of increasing the number of users that can access a telecommunications channel of a given bandwidth incorporating the method of claim 9.

19-22 (Cancelled)

23. (Original) A method of adaptive filtering comprising obtaining a sample signal, or signals, from a plurality of channels and using the sample signals to form at least one weighting coefficient for at least one of the channels, the weighting coefficients being obtained by performing an error function reduction iteration associated with the difference between the sampled signal, or signals, and a reference values, the error function being reduced by operating on a sample signal, or signals, from a subset of the available channels that is smaller than the number of available channels, and changing the channel, or channels, present in the subset between at least two iterations of the reduction of the error function.

24. (Original) The method of claim 23 including providing switching means to switch between subsets of channels.

25. (Previously presented) The method of claim 23 including providing a subset of channels that is significantly smaller than the total number of channels.

26. (New) A signal processing system comprising:

a plurality of input channels for the reception of inputs signals;

a weighing system for applying weights to signals received by the input channels;

a beamformer for beamforming the weighted signals;

a sampling system, adapted to sample a subset of the input signals at any one time, for sampling the input signals prior to their being weighted;

a processor adapted to process outputs from the sampling system and to generate weights for the weighting system;

wherein the processor is adapted to use the subset in generating the weights, wherein successive samples may be from a different subset, such that the subset includes at least one input channel determined to make a significant contribution to a reduction in an error function associated with an output of the beamformer.

27. (New) A system according to claim 26 wherein the sampling system is adapted to select a single input channel at a given time.